

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): An automatic color correction apparatus for carrying out color correction upon a specific object in a color image, said apparatus comprising
an object color information memory for memorizing split hue regions obtained by splitting a hue distribution region of the specific object as well as a distribution frequency; representative color extracting means for extracting a representative color of the specific object from a given input image with reference to the memory content of the object color information memory;
a color correction parameter memory for memorizing color correction parameters assigned to the split hue regions;
color correction parameter determining means for determining from the memory content of the color correction parameter memory an optimum color correction parameter adapted to the representative color extracted by the representative color extracting means, and
color correction processing means for carrying out color correction acting upon a specific color by the use of the optimum color correction parameter determined by the color correction parameter determining means.

2. (currently amended): An automatic color correction apparatus for carrying out color correction upon a specific object in a color image, said apparatus comprising
an object color information memory for memorizing split hue regions obtained by
splitting a hue distribution region of the specific object as well as a distribution frequency;
representative color extracting means for extracting a representative color of the specific
object from a given input image with reference to the memory content of the object color
information memory;
a color correction parameter memory for memorizing color correction parameters
assigned to the split hue regions;
color correction parameter determining means for determining from the memory content
of the color correction parameter memory an optimum color correction parameter adapted to the
representative color extracted by the representative color extracting means;
color correction processing means for carrying out color correction acting upon a specific
color by the use of the optimum color correction parameter determined by the color correction
parameter determining means; andAn automatic color correction apparatus as claimed in claim 1,
further comprising:
an extended object color information memory for memorizing split regions obtained by
splitting a distribution range related to a hue, a saturation, or a brightness of the specific object or
a combination thereof obtained by analyzing a plurality of images preliminarily picked up for the
specific object under various image pickup environments as well as the distribution frequency;
said representative color extracting means

obtaining a histogram of the hue, the saturation, or the brightness of the specific object in the input image or the combination thereof with reference to the split regions related to the hue, the saturation, the brightness, or a combination thereof, multiplying the distribution frequency memorized in said extended object color information memory by the histogram, and extracting as the representative color of the specific object a color present in a region having a maximum value as a result of multiplication.

3. (currently amended): An automatic color correction apparatus for carrying out color correction upon a specific object in a color image, said apparatus comprising
an object color information memory for memorizing split hue regions obtained by
splitting a hue distribution region of the specific object as well as a distribution frequency;
representative color extracting means for extracting a representative color of the specific
object from a given input image with reference to the memory content of the object color
information memory;
a color correction parameter memory for memorizing color correction parameters
assigned to the split hue regions;
color correction parameter determining means for determining from the memory content
of the color correction parameter memory an optimum color correction parameter adapted to the
representative color extracted by the representative color extracting means; and

color correction processing means for carrying out color correction acting upon a specific color by the use of the optimum color correction parameter determined by the color correction parameter determining means; An automatic color correction apparatus as claimed in claim 1,

wherein the representative color extracting means extracts the representative color of the specific object by the use of the variance of coordinate positions in the image in addition to the distribution frequency related to a hue, a saturation, or a brightness of the specific object or a combination thereof.

4. (currently amended): An automatic color correction apparatus for carrying out color correction upon a specific object in a color image, said apparatus comprising
an object color information memory for memorizing split hue regions obtained by
splitting a hue distribution region of the specific object as well as a distribution frequency;
representative color extracting means for extracting a representative color of the specific
object from a given input image with reference to the memory content of the object color
information memory;

a color correction parameter memory for memorizing color correction parameters
assigned to the split hue regions;
color correction parameter determining means for determining from the memory content
of the color correction parameter memory an optimum color correction parameter adapted to the
representative color extracted by the representative color extracting means; and

color correction processing means for carrying out color correction acting upon a specific color by the use of the optimum color correction parameter determined by the color correction parameter determining means; An automatic color correction apparatus as claimed in claim 1, wherein the color correction parameter memory memorizes the color correction parameters assigned not only to the split hue regions of the specific object but also to split saturation regions and split brightness regions obtained by splitting a saturation distribution region and a brightness distribution region of the specific object, respectively.

5. (currently amended): An automatic color correction apparatus for carrying out color correction upon a specific object in a color image, said apparatus comprising an object color information memory for memorizing split hue regions obtained by splitting a hue distribution region of the specific object as well as a distribution frequency; representative color extracting means for extracting a representative color of the specific object from a given input image with reference to the memory content of the object color information memory;
a color correction parameter memory for memorizing color correction parameters assigned to the split hue regions;
color correction parameter determining means for determining from the memory content of the color correction parameter memory an optimum color correction parameter adapted to the representative color extracted by the representative color extracting means;

color correction processing means for carrying out color correction acting upon a specific color by the use of the optimum color correction parameter determined by the color correction parameter determining means; An automatic color correction apparatus as claimed in claim 1, further comprising

an input-dependent object color information memory for memorizing with respect to each individual input apparatus split regions obtained by splitting a distribution range related to a hue, a saturation, or a brightness of the specific object or a combination thereof as well as a distribution frequency; ;

an output-dependent color correction parameter memory for holding the color correction parameter with respect to each individual output apparatus, and
input/output apparatus selecting means supplied from the outside with the type of an input/output color image processing apparatus for reading corresponding information from said input-dependent object color information memory and said output-dependent color correction parameter memory.

6. (original): An automatic color correction apparatus as claimed in claim 1, further comprising

a sample image memory for memorizing a plurality of kinds of sample color images of the specific object,

manual color correction processing means responsive to an external instruction for entering color information of said color images memorized in said sample image memory, and

color correction parameter generating means for generating the color correction parameters to be memorized in the color correction parameter memory with reference to the information supplied from the manual color correction processing means.

7. (previously presented): An automatic color correction method for carrying out color correction upon a specific object in a color image, said method comprising the steps of extracting a representative color of the specific object from a given input image, determining, with reference to the content of a color correction parameter memory for memorizing color correction parameters assigned to split hue regions obtained by splitting a hue distribution region of the specific object, an optimum color correction parameter adapted to the representative color extracted in the preceding step, and carrying out color correction acting upon a specific color by the use of the optimum color correction parameter.

8. (currently amended): An automatic color correction method for carrying out color correction upon a specific object in a color image, said method comprising the steps of extracting a representative color of the specific object from a given input image;
determining, with reference to the content of a color correction parameter memory for memorizing color correction parameters assigned to split hue regions obtained by splitting a hue distribution region of the specific object, an optimum color correction parameter adapted to the representative color extracted in the preceding step; and

carrying out color correction acting upon a specific color by the use of the optimum color correction parameter;

~~An automatic color correction method as claimed in claim 7, wherein the color correction parameter memory memorizes the color correction parameters assigned not only to the split hue regions of the specific object but also to split saturation regions and split brightness regions obtained by splitting a saturation distribution region and a brightness distribution region of the specific object, respectively.~~

9. (currently amended): An automatic color correction method for carrying out color correction upon a specific object in a color image, said method comprising the steps of extracting a representative color of the specific object from a given input image; determining, with reference to the content of a color correction parameter memory for memorizing color correction parameters assigned to split hue regions obtained by splitting a hue distribution region of the specific object, an optimum color correction parameter adapted to the representative color extracted in the preceding step; and

carrying out color correction acting upon a specific color by the use of the optimum color correction parameter;

~~An automatic color correction method as claimed in claim 7, wherein the step of extracting the representative color extracts the representative color of the specific object by the use of the variance of coordinate positions in the image in addition to the distribution frequency related to a hue, a saturation, or a brightness of the specific object, or a combination thereof.~~

10. (previously presented): A recording medium storing an automatic color correction control program for controlling an automatic color correction apparatus to carry out color correction upon a specific object in a color image, said automatic color correction control program

controlling the automatic color correction apparatus to make the automatic color correction apparatus carry out operations of extracting from a given input image a representative color of the specific object,

assigning color correction parameters to split hue regions obtained by splitting a hue distribution region of the specific object,

determining an optimum color correction parameter adapted to the representative color extracted as mentioned above, and

carrying out color correction acting upon a specific color by the use of the optimum color correction parameter.

11. (previously presented): A color correction apparatus for carrying out color correction upon a specific object in a color image, said apparatus comprising:

representative color extracting means for extracting a representative color of a specific object from a given input image;

color correction parameter determining means for determining an optimum color correction parameter for said representative color based on color correction parameters assigned to a range of color distribution of the said specific object may have; and

color correction processing means for carrying out color correction acting upon color including said representative color of said specific object based on said optimum color correction parameter.

12. (previously presented): A color correction apparatus for carrying out color correction upon a specific object in a color image, said apparatus comprising:

representative color extracting means for extracting a representative color of a specific object from a given input image;

color correction parameter determining means for determining an optimum color correction parameter for said representative color based on color correction parameters assigned to a range of color distribution of the said specific object may have, and

color correction processing means for carrying out color correction acting upon color including said representative color of said specific object based on said optimum color correction parameter.

13. (previously presented): A color correction method for carrying out color correction upon a specific object in a color image, said method comprising the steps of:

extracting a representative color of a specific object from a given input image;

determining an optimum color correction parameter for said representative color based on color correction parameters assigned to a range of distribution of the color that said specific object may have; and

carrying out color correction acting upon color of said specific object based on said optimum color correction parameter.

14. (previously presented): A color correction method for carrying out color correction upon a specific object in a color image, said method comprising the steps of:

extracting a representative color of a specific object from a given input image;

determining an optimum color correction parameter for said representative color based on color correction parameters assigned to a range of distribution of the color that said specific object may have; and

carrying out color correction acting upon color including said representative color of said specific object based on said optimum color correction parameter.

15. (previously presented): A color correction method, comprising:
carrying out color correction using color correction parameters;

wherein the color correction parameters are based on only a range of color distribution of a specific object.